

CLAIMS

What is claimed is:

- 5 1. An apparatus for cutting a web material fed continuously along a path
through said apparatus, said apparatus comprising:
 a rotating cutting cylinder having a length and including a plurality of blade
segments distributed along the length of the cutting cylinder and a plurality of actuators
connected to the plurality of blade segments and operable to produce selective extension
10 and retraction of the blade segments with respect to the cutting cylinder, at least one of the
plurality of blade segments remaining retracted during a rotation of the cutting cylinder;
and
 an opposing member, the cutting cylinder and the opposing member being
arranged on opposite sides of the path.
15
2. An apparatus as claimed in claim 1, wherein the plurality of actuators are
housed in an axial cavity inside the cutting cylinder.
3. An apparatus as claimed in claim 1, wherein each of the plurality of
20 actuators is connected to one of the plurality of blade segments.
4. An apparatus as claimed in claim 3, wherein each of the plurality of
actuators is secured at one end to a first fulcrum integral with the cutting cylinder and at
the other end to a second fulcrum integral with the corresponding blade segment.
25
5. An apparatus as claimed in claim 4, wherein the first fulcrum and the
second fulcrum are ball joints.
6. An apparatus as claimed in claim 3, wherein the cutting cylinder has a first
30 rotary distributor to supply the cutting cylinder with an actuating fluid for the actuators
and a second rotary distributor to supply the cutting cylinder with control signals and
supply power for respective solenoid valves of the actuators.

7. An apparatus as claimed in claim 6, wherein the solenoid valves of the actuators are contained in a module located at one end of the cutting cylinder.

8. An apparatus as claimed in claim 1, wherein each blade segment is
5 supported by a pivoting part hinged about a hinge axis, extension and retraction of the blade segments being produced by a pivoting movement of the pivoting part about the hinge axis.

9. An apparatus as claimed in claim 8, wherein the cutting cylinder defines a
10 circumference, and wherein the hinge axis is radially external to the circumference of the cutting cylinder.

10. An apparatus as claimed in claim 8, further comprising a stop engageable
with each pivoting part to absorb at least a portion of a stress exerted on the corresponding
15 blade segment during cutting of the material, each pivoting part being disengaged from the stop in a non-cutting position of the corresponding blade segment.

11. An apparatus as claimed in claim 10, wherein the cutting cylinder defines a
circumference, wherein each blade segment is situated, when extended, circumferentially
20 between the hinge axis of the corresponding pivoting part and the corresponding stop.

12. An apparatus for cutting a web material fed continuously along a path through said apparatus, said apparatus comprising:

a rotating cutting cylinder a length and including a plurality of blade segments distributed along the length of the cutting cylinder, each of the plurality of blade segments being selectively extended and retracted such that, during a rotation of the cutting cylinder, one of the plurality of blade segments is extended to cut the material and another of the plurality of blade segments remains retracted so as to not cut the material; and

an opposing member, the cutting cylinder and the opposing member being arranged on opposite sides of the path.

13. An apparatus as claimed in claim 12, wherein the cutting cylinder further includes a plurality of actuators connected to the plurality of blade segments and operable to selectively extend and retract the plurality of blade segments to cut the material.

14. An apparatus as claimed in claim 13 wherein the plurality of actuators are housed in an axial cavity inside the cutting cylinder.

15. An apparatus as claimed in claim 13, wherein each of the plurality of actuators is connected to one of the plurality of blade segments.

16. An apparatus as claimed in claim 15, wherein each of the plurality of actuators is secured at one end to a first fulcrum integral with the cutting cylinder and at the other end to a second fulcrum integral with the corresponding blade segment.

17. An apparatus as claimed in claim 16, wherein the first fulcrum and the second fulcrum are ball joints.

18. An apparatus as claimed in claim 13, wherein the cutting cylinder has a first rotary distributor to supply the cutting cylinder with an actuating fluid for the actuators and a second rotary distributor to supply the cutting cylinder with control signals and supply power for respective solenoid valves of the actuators.

19. An apparatus as claimed in claim 18, wherein the solenoid valves of the actuators are contained in a module located at one end of the cutting cylinder.

20. An apparatus as claimed in claim 12, wherein each blade segment is
5 supported by a pivoting part hinged about a hinge axis, extension and retraction of the blade segments being produced by a pivoting movement of the pivoting part about the hinge axis.

21. An apparatus as claimed in claim 20, wherein the cutting cylinder defines a
10 circumference, wherein the hinge axis is radially external to the circumference of the cutting cylinder.

22. An apparatus as claimed in claim 20, further comprising a stop engageable
with each pivoting part to absorb at least a portion of a stress exerted on the corresponding
15 blade segment during cutting of the material, each pivoting part being disengaged from the stop in a non-cutting position of the corresponding blade segment.

23. An apparatus as claimed in claim 22, wherein the cutting cylinder defines a
circumference, wherein each blade segment is situated, when extended, circumferentially
20 between the hinge axis of the corresponding pivoting part and the corresponding stop.

24. An apparatus for cutting a web material fed continuously along a path through said apparatus, said apparatus comprising:

5 a rotating cutting cylinder having a length and including a plurality of blade segments distributed along the length of the cutting cylinder, each of the plurality of blade segments being selectively extended and retracted such that, during a rotation of the cutting cylinder, one of the plurality of blade segments is extended to cut the material and another of the plurality of blade segments remains retracted so as to not cut the material.

10 25. An apparatus as claimed in claim 24, wherein the cutting cylinder further includes a plurality of actuators connected to the plurality of blade segments and operable to selectively extend and retract the plurality of blade segments to cut the material.

15 26. An apparatus as claimed in claim 25, wherein the plurality of actuators are housed in an axial cavity inside the cutting cylinder.

27. An apparatus as claimed in claim 25, wherein each of the plurality of actuators is connected to one of the plurality of blade segments.

20 28. An apparatus as claimed in claim 27, wherein each of the plurality of actuators is secured at one end to a first fulcrum integral with the cutting cylinder and at the other end to a second fulcrum integral with the corresponding blade segment.

25 29. An apparatus as claimed in claim 28, wherein the first fulcrum and the second fulcrum are ball joints.

30 30. An apparatus as claimed in claim 27, wherein the cutting cylinder has a first rotary distributor to supply the cutting cylinder with an actuating fluid for the actuators and a second rotary distributor to supply the cutting cylinder with control signals and supply power for respective solenoid valves of the actuators.

31. An apparatus as claimed in claim 30, wherein the solenoid valves of the actuators are contained in a module located at one end of the cutting cylinder.

32. An apparatus as claimed in claim 24, wherein each blade segment is supported by a pivoting part hinged about a hinge axis, extension and retraction of the blade segments being produced by a pivoting movement of the pivoting part about the hinge axis.

5

33. An apparatus as claimed in claim 32, wherein the cutting cylinder defines a circumference, wherein the hinge axis is radially external to the circumference of the cutting cylinder.

10

34. An apparatus as claimed in claim 32, further comprising a stop engageable with each pivoting part to absorb at least a portion of a stress exerted on the corresponding blade segment during cutting of the material, each pivoting part being disengaged from the stop in a non-cutting position of the corresponding blade segment.

15

35. An apparatus as claimed in claim 34, wherein the cutting cylinder defines a circumference, wherein each blade segment is situated, when extended, circumferentially between the hinge axis of the corresponding pivoting part and the corresponding stop.

20

36. An apparatus as claimed in claim 24, further comprising an opposing member, the cutting cylinder and the opposing member being arranged on opposite sides of the path.

25

37. An apparatus as claimed in claim 36, wherein, when at least one of the plurality of blade segments is extended to engage one side of the material, the opposing member engages the other side of the material to oppose and cooperate with the at least one of the plurality of blade segments to cut the material.